# Review of Plant Pathology

**Volume 70**

*Prepared by*

**C·A·B INTERNATIONAL DIVISION OF CROP PROTECTION AND GENETICS**
**in association with the**
**International Mycological Institute**

**1991**

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# Review of Plant Pathology

A monthly journal compiled from the CAB ABSTRACTS database.
Produced by the DIVISION OF CROP PROTECTION AND GENETICS
in association with the International Mycological Institute

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The Department of Crop Protection also prepares: *Review of Agricultural Entomology, Nematological Abstracts, Weed Abstracts* and *Seed Pathology and Microbiology.*

# How to use Review of Plant Pathology

## ● Either BROWSE, using the CONTENTS

Within each issue, records are sequenced according to their principal subject matter – see CONTENTS page.

About three quarters of the records are arranged by CROP, so browsing is particularly useful to crop specialists. Within each crop, records are arranged in the order:

- general
- viruses, mycoplasma-like organisms, spiroplasmas, etc.
- fungi
- bacteria
- non-parasitic disorders.

## ● Or SEARCH, using the INDEXES

Subject indexes and author indexes are compiled monthly and cumulated annually.

### SUBJECT INDEX

This guides the user to all the records that make significant reference to specific topics, including the following:

HOST PLANT SPECIES AND GROUPS

English common names are used for major crops, scientific names for minor crops and other plants. Entries point to pathogen species and then to subject headings. Records that refer only to groups are indexed under group names, e.g. cereals, vegetables.

PATHOGEN SPECIES AND GROUPS

Pathogens are indexed under scientific names. Entries point also to host species and other subject headings. Records that refer only to groups are indexed under group names, e.g. bacteria, fungi.

COUNTRY OR REGION

For records where geographical occurrence is of particular relevance.

AGROCHEMICALS etc.

Including common or chemical names, with cross-references from proprietary names. Including chemical elements with well defined deficiency or toxicity syndromes.

VECTORS

OTHER HEADINGS

The main ones are listed here. Scan the ANNUAL INDEX for a more complete picture.

| | | | |
|---|---|---|---|
| Acid rain | Economics of control | Phytoalexins | Seed testing |
| Air pollution | Electron microscopy | Plant extracts | Seed treatment |
| Air spora | Fertilizers | Postharvest decay | Soil |
| Apparatus | Heat treatment | Records, geography | Soil treatment |
| Bibliographies | Host parasite relationships | Records, hosts | Spore dispersal |
| Biological control | Induced mutations | Regulation | Spore germination |
| Books | Mineral deficiencies | Reports | Storage decay |
| Conferences | Molecular genetics | Reviews | Storage disorders |
| Crop losses | Mycorrhizas | Quarantine | Techniques |
| Cultural methods | Mycotoxins | Seedborne organisms | *Viruses |

* All relevant records are indexed under viruses, subdivided by virus group name where appropriate. Records are also indexed under hosts and under individual virus names.

### AUTHOR INDEX

All authors of each paper are indexed alphabetically by surname. Variants of surnames are also indexed.

## A TYPICAL RECORD

1) Abstract No.
2) Authors
3) English translation of title
4) Title
5) Journal or other document
6) (Year) Volume (Part) pages
7) Language of text, any other language of summary
8) Address of first author
9) Abstract
10) Preferred name, if the author uses another name. (Names of fungal perfect states are preferred to those of imperfect states.)

The title should be read as an integral part of the abstract.

1 2 3

4427 GIEFFERS, W.; HESSELBACH, J. [**Disease incidence and yield of different cereal cultivars in pure stands and mixtures. V. Comparative summary of cultivar mixtures with barley, wheat and rye 1984–1986.**]

4 Krankheitsbefall und Ertrag verschiedener Getreidesorten im Rein- und Mischanbau. V. Vergleichender Überblick der Sortenmischungen mit Gerste, Weizen und Roggen 1984–1986. *Zeitschrift für Pflanzenkrankheiten und* 5

6 *Pflanzenschutz* (1988) 95 (2) 203–209 [De, en, 23 ref.] 7

8 Max-Plank-Inst. Züchtungsforschung, 5000 Cologne 30, German Federal Republic.

9 Results are summarized of large and small plot trials in various locations in the GFR with pure stands and cultivar mixtures of spring and winter barley, winter wheat and rye with different sources of resistance to fungal diseases. Depending on the host, disease incidence due to *Erysiphe*

10 *graminis, Septoria* [*Leptosphaeria*] *nodorum, Rhynchosporium secalis, Puccinia* spp. and *Pseudocercosporella herpotrichoides*, both individually and in combination, was assessed. Ratings for leaf diseases were lower in mixtures than in pure stands. Infection due to *P. herpotrichoides* was mostly lower, but was higher in some winter barley and wheat cultivar mixtures. Yields were higher in mixtures than in their corresponding pure stands: rye 11.4%, spring barley 10.5%, wheat 4.4% and winter barley 1.2%.

## TO OBTAIN A COPY OF THE ORIGINAL ITEM

Use the CAB International Document Delivery Service. A form is printed in this issue.

## LIST OF JOURNALS CITED

The annual indexes include an alphabetical list of all journals cited during the year.

## ABBREVIATIONS

A number of easily understood abbreviations are used (e.g. sp., species). Initial letters may be used for a virus after its full name has appeared. The following are also used:

| | | | | | |
|---|---|---|---|---|---|
| a.e. | acid equivalent | EM | electron microscope | SDS | sodium dodecyl sulfate |
| a.i. | active ingredient | FW | fresh weight | SEM | scanning electron microscope |
| c.f.u. | colony-forming units | ID | infective dose | str. | strain |
| conc. | concentrated | LC | lethal concentration | w.p. | wettable powder |
| concn | concentration(s) | LD | lethal dose | | |
| DW | dry weight | PAGE | polyacrylamide gel electrophoresis | | |
| ED | effective dose | RH | relative humidity | | |
| ELISA | enzyme-linked immunosorbent assay | *RPP* | *Review of Plant Pathology* | | |

In abbreviations for languages an initial capital denotes the language of the paper, an initial small letter the language of the summary.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Af | Afrikaans | En | English | Ja | Japanese | Pt | Portuguese |
| Al | Albanian | Eo | Esperanto | Ko | Korean | Ro | Romanian |
| Ar | Arabic | Es | Spanish | La | Latin | Ru | Russian |
| Az | Azerbaijani | Fi | Finnish | Li | Lithuanian | Sh | Serbo-Croat (either script) |
| Be | Byelorussian (White Russian) | Fr | French | Lv | Latvian | Sk | Slovak |
| Bg | Bulgarian | Gr | Greek | Ma | Macedonian | Sn | Slovene |
| Ch | Chinese | He | Hebrew | My | Malay and Bahasa Malaysia | Sv | Swedish |
| Cs | Czech | Hu | Hungarian | Nl | Dutch, Flemish | Ta | Tajik |
| Da | Danish | Ia | Interlingua | No | Norwegian | Tr | Turkish |
| De | German | In | Indonesian | Pe | Persian | Uk | Ukrainian |
| Ee | Estonian | Is | Icelandic | Pl | Polish | | |
| | | It | Italian | | | | |

# CAB International Division of Crop Protection and Genetics
# How the crop protection abstract journals are compiled

*Review of Agricultural Entomology* — *Nematological Abstracts*
*Review of Plant Pathology* — *Weed Abstracts*

## Their purpose

These four journals are designed to keep readers in touch with developments in the crop protection sciences, by abstracting the more important world scientific literature and by publishing review articles. A calendar of crop protection events is included. The abstracts are intended to be full enough for readers to decide whether they need to see the original documents.

## The scale and diversity of the agricultural source literature

Over 10,000 journals and other serial publications on agriculture and allied disciplines are received regularly by CAB International; these comprise more than 50,000 documents annually. Over 3000 books and other non-serials are also received each year. Publications are received from some 150 countries, in more than 50 languages. Even though English is increasingly the international language of science, some 40% of the literature is in other languages.

## Scanning and abstracting the source literature of crop protection

All these documents are scanned by CABI subject specialists and are available to the CABI Division of Crop Protection and Genetics. About 3000 journals, and numerous new books, are scanned regularly in the Division whose staff includes specialists in entomology, plant pathology, nematology, weed science, plant genetics and also linguists.

These specialists identify items within the scope of the four crop protection journals – broadly, scientific documents about agriculturally significant pests (invertebrates, plant pathogens and weeds), beneficial organisms, and relevant crop protection practices and products.

For each item, a record is created consisting of:
- bibliographic information
- an abstract, in English
- subject coding
- index terms.

## The CAB ABSTRACTS database

These records are added to the CAB ABSTRACTS bibliographic database. This machine-readable database contains all records published since 1973 in about 50 CABI abstract journals. The total of over 2 million records is growing by more than 150,000 new records per year, of which more than 20,000 per year are on crop protection. The database is available to users for retrospective retrieval and for maintaining current awareness of literature on defined topics. See separate page, and inside back cover.

## The crop protection abstract journals

At intervals, relevant records newly added to the database are selected and become the basis for a new issue of one of the crop protection journals. Records are sorted into a standard sequence within each journal issue, according to subject matter. An author index and a subject index are generated. Cumulative indexes are generated at the end of each year.

## Scientific links

Each of the four crop protection journals has its own international Editorial Advisory Board of subject specialists. Their members advise on the content and development of the journals, and commission review articles of topical interest.

The CABI Division of Crop Protection and Genetics maintains close contact with the International Institute of Entomology (IIE), the International Mycological Institute (IMI), the International Institute of Parasitology (IIP) and the International Institute of Biological Control (IIBC). These links are especially important in providing the authority for the preferred names of pest organisms used in the journal indexes. IIBC is responsible for compiling the related abstract journal *Biocontrol News and Information*.

The Division of Crop Protection and Genetics is also in close contact with subject specialists in the four other Divisions of the CABI Information Services who compile 45 abstract journals covering the rest of agriculture, forestry and allied disciplines. Comments from users are always welcome. Please write to Mr Geoffrey A. Viney, Division of Crop Protection and Genetics, CAB International, Wallingford, Oxon OX10 8DE, UK.

# Retrieving records on crop protection from the CAB ABSTRACTS database

The CAB ABSTRACTS database gives access to all records published since 1973 in *Review of Plant Pathology, Review of Agricultural Entomology, Nematological Abstracts, Weed Abstracts, Biocontrol News and Information* and the other CAB International abstract journals.

**The database provides a powerful tool for retrieving:**

- records from any one of the CONTENTS headings or their subdivisions (more than 200 subdivisions are explained in *CAB ABSTRACTS Online Manual*).

- records containing, for example:
  - an author's name
  - a plant name
  - a pest name (invertebrate, plant pathogen or weed)
  - a country name
  - a vector name
  - the name of a beneficial organism
  - an agrochemical name
  - a journal name
  - any chosen word or phrase (including any index phrase)
  - any combination of these.

**Retrieval can be:**

- ONLINE, using a personal computer or terminal, linked to the telephone system. Output can be printed and mailed to you or, subject to certain conditions, downloaded for local processing.

- From CD-ROM. CAB ABSTRACTS data for 1984–1991 are available on CD-ROM.

- By CAB International, who can hold a profile of your interests and send you relevant records on paper or on floppy disks. This can be done once or as a regular monthly service.

**Further information is available from any of the CAB International offices.**

Full particulars of online hosts are given in the CAB International Information Services Catalogue, available free on request.

**Three database guides of particular interest to users of the CAB ABSTRACTS database are:**

- *CAB ABSTRACTS Online Manual*, 1989 Edition. A detailed guide to online retrieval.

- *CAB Thesaurus*, 1990 Edition. A hierarchical list of terms used in indexing all the 50 CAB International abstract journals and the AGRICOLA database of the National Agricultural Library of the USA.

- *CAB International Serials Checklist*, 1988. A list of all titles regularly scanned by CAB International.

# INTERNATIONAL MYCOLOGICAL INSTITUTE

**An Institute of CAB International**

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From September 1992, IMI's new address will be:
Bakeham Lane, Englefield Green, Egham
Surrey, TW20 9TY

Director: Professor D.L. Hawksworth PhD, DSc, FLS, CBiol, FIBiol
Division Heads: Identification and Taxonomic Services: B.C. Sutton, PhD, DSc
Culture Collection and Industrial Services: D. Allsopp, PhD, CBiol, FIBiol, MIInfSc

The International Mycological Institute (IMI), with a staff of about 70 and an annual budget of £1.2m, is the largest centre concerned with systematic mycology in the world. Founded in 1920, the Institute has from the first provided world services to mycologists and workers in related disciplines, particularly plant pathology, medical and veterinary mycology and, more recently, industrial mycology, biodeterioration and biotechnology.

**Identification Services**
Correct diagnosis of the cause of a disease, spoilage, or industrial problem is the first step in finding an appropriate solution. IMI provides a reliable, up-to-date identification service for about 6000 cultures and specimens each year, received from a wide variety of sources. Tropical plant pathogenic bacteria are also covered.
Staff are involved in wide-ranging research programmes on microfungal systematics. They produce about 80 scientific papers each year and also compile the *Dictionary of the Fungi, Index of Fungi, Bibliography of Systematic Mycology, Systema Ascomycetum, Descriptions of Fungi and Bacteria, Distribution Maps of Plant Diseases, Mycological Papers* and *Phytopathological Papers*.
The Service is provided free of charge to non-commercial users in CABI member countries. Information on the submission of material and details of charges for users in non-member countries and in commercial organizations are available on request.

**Culture Collection**
The Culture Collection, which incorporates the UK National Collection of Fungus Cultures, maintains over 18,000 strains; it is one of the largest service collections for fungus cultures in the world.
Cultures are available for sale world-wide for industrial, scientific and educational use, and metabolic and physiological data on the strains held are actively added to the collection's databank.
The 10th edition of the Catalogue will be available free of charge early in 1992 and will list over 11,000 strains available from the open collection. Additions to the collection are welcome, especially of fungi otherwise not represented in the collection or of biochemical, economic and industrial importance.
The Culture Collection is recognized as an International Depositary Authority for patent strains under the terms of the Budapest Treaty.

**Training**
IMI offers a wide variety of training activities, ranging from post-graduate research degrees to one-day specialist seminars. Each year a number of longer courses, including an annual six-week International Course on the Identification of Fungi of Agricultural Importance are held.
Overseas workshops, individual training and tuition for mycologists, plant pathologists and industrial staff are also arranged. Visiting research scientists are welcome to spend time at the Institute as part of their research work.

**Plant Pathology Laboratory**
The Institute's Plant Pathology Laboratory incorporates the UK Overseas Development Administration Plant Pathology Liaison Unit. Backed by the expertise and information available within IMI, it provides disease diagnosis, technical support and consultancy services for agricultural scientists, advisers, growers and shippers worldwide. Research is also undertaken, primarily on specific problems relating to pathogen variability and characterization.

**Consultancy and Contract Services**
IMI is able to undertake consultancy assignments involving surveys of disease problems and also consultancy and contract research in any of its fields of activity. Staff can also assist in the preparation of mycological publications on a contract basis.

**Biodeterioration and Industrial Laboratory**
The laboratory is accredited under the UK National Measurement Accreditation Service (NAMAS) and carries out a wide variety of industrial testing, contract research and consultancies. Over 70 contracts are carried out annually, involving a wide range of materials such as automotive and aircraft parts, museum and library specimens, fuels and lubricants, electrical equipment, building materials and stored foods. Services involving organisms other than fungi can also be arranged, and a tropical testing facility is available.

**Yeast Investigation Laboratory**
A specialist laboratory, headed by Dr R.R. Davenport, (seconded from AFRC Food Research Institute) has been established in IMI. It provides consultancy, investigatory contract research and training facilities related to specific needs of the food and beverage industries, both in the UK and overseas.

**Biochemical Laboratory**
The Biochemistry Laboratory acts as a service unit within the Institute for routine and project work. Techniques currently available include detection and screening of fungal enzymes as secondary metabolites (including mycotoxins) and a number of methods for characterizing strains and taxa at a molecular level.

**Information**
The IMI library holds a unique collection of literature on plant pathology, fungal systematics, medical and veterinary mycology, biodeterioration and fungal biotechnology. Its stocks consist of approximately 1000 current journals, 37,000 volumes and books and 139,000 reprints.
IMI collaborates with the Information Services of CABI in the publication of books and journals in its fields, including seven serial publications.
Literature searches and studies can be carried out to specific individual requirements, and a photocopy service is also available to provide copies of original source literature.

**Further details**
Please write or telephone for our current Services and Publications booklet and any further information on specific services that you may require. All work is carried out by IMI on a confidential basis, and we will be pleased to discuss your individual requirements without obligation.

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